SACRAMENTO CITY COLLEGE
EST. 1916

# Experiment 04

Decomposition

Report Form

**Name:** _____

**Date:** _____

**Class Ticket:** _____

## Data

**Table 1:** Raw Data

| Data | | Given Error |
|---|---|---|
| Mass dish | | Instrumental: ± 0.04 g |
| Mass dish + initial mass $NaHCO_3$ (before heating) | | Instrumental: ± 0.04 g |
| Mass dish + $Na_2CO_3$ (after heating) | | Instrumental: ± 0.04 g |
| Molar mass $NaHCO_3$ | 84.007 g | Instrumental: ± 0.002 g |
| Molar mass $Na_2CO_3$ | 105.988 g | Instrumental: ± 0.001 g |
| | | |
| Mass 100 mL grad cylinder | | |
| Mass 100 mL grad cylinder + $Na_2CO_3$ | | |
| Molarity of $Na_2CO_3$ | | |

**Table 2:** Calculated Results

| Calculations | | Calculated Error |
|---|---|---|
| Mass of $NaHCO_3$ (before heating) | | |
| Mass of $Na_2CO_3$ (after heating) | | |
| Theoretical mass of $Na_2CO_3$ | | |
| % Yield $Na_2CO_3$ | | |



remember your significant digits and units

## Questions

1. Why is baking soda, $NaHCO_3$, included in recipes for cakes and muffins? (What purpose does it fulfill? *Qualitative question*)

2. How much baking soda will you need to start with in order to produce 10.25g $Na_2CO_3$? (You need to calculate this, do not forget your units and significant digits. *Quantative question*)

3. If there was a loss of 5.63 g after heating the sodium bicarbonate, how many grams of sodium bicarbonate was present before heating? (You need to calculate this, do not forget your units and significant digits. *Quantative question*)



remember your significant digits and units

4. Assume that ten students achieved the percent yield as show to the right. Describe how you would either prove or disprove that there is a systemic bias in this experiment that makes it higher than 100% yield. (*Quantative question*)

| Student Values |
|---|
| 99.68% |
| 102.32% |
| 102.39% |
| 101.49% |
| 101.54% |
| 100.46% |
| 99.23% |
| 99.03% |
| 99.72% |
| 99.85% |

**Your Calculations** (Yes, I want to see your calculations here)



remember your significant digits and units